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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/518,664

12/17/2004

Akira Usami

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1742

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/518,664		USAMI ET AL.	
	Examiner		Art Unit	
	Deborah Yee		1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 18-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5-31-06;8-15-05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

- I. Claims 1-9 and 18-27 are, drawn to steel alloy, classified in class 420, subclass 89.
 - II. Claims 10,11,and 14, drawn to method of hot rolling, accelerated cooling at 5 to 100C/sec to a temperature range of 600-300C followed by cooling at rate of 0.1 to 4C/sec to 100C, and then tempering or annealing at a temperature of 500C or lower, classified in class 148, subclass 654.
 - III. Claims 12 and 13, drawn to method of hot rolling, normalizing from Ac3 to 1,000C followed by cooling at 0.5 to 4C/sec to a temperature range from 700 to 300C, classified in class 148, subclass 653.
 - IV. Claims 15 to 17, drawn to a crude oil tank and its method of protecting surface by removing scale and coating layers of protective film at 10 microns or more, classified in class 148, subclass 537, 320.
2. The inventions listed as Groups of groups I to IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The common technical feature that groups I to IV share is the composition of claim 1. This composition does not provide a contribution over the prior art. Thus the four groups lack unity of invention. See MPEP 1850.

3. During a telephone conversation with Mr. John Kelly on April 24, 2007 a provisional election was made with traverse to prosecute the invention of group I, claims 1 to 9 and 18 to 27. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10 to 17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

5. Claims 19 to 27 are objected to under 37 CFR 1.75(c) as being in improper because they are dependent from a multiple dependent claim. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 to 5, 7 to 9, 18, 21, 22, 24, 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,993,570 (hereinafter Gray), Japanese patent 10-17929 (hereinafter JP'929), Japanese patent 58-107476 §

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(hereinafter JP'476) or Japanese patent 2001-288512 (hereinafter JP'512). Note that

Japanese patents have been cited in applicants' IDS dated August 15, 2005.

8. Each reference discloses steel alloy examples that meet the compositional limitations recited by one or more of the claims, and when calculated, meet the Ceq equation recited by claim 3. See Gray Steel B in Table IV of columns 3-4; JP'929 steels H and R in Table 1 of columns 11-12; JP'476 steels A-E in Table 1 on page 376; and JP'512 steel 4 in table 1 on page 4.

9. Although solute Mo+solute W = at least 0.005% as recited by claim 3 or the area percentage of microscopic segregation portions where the Mn concentration is 1.2 times or more the average Mn concentration in the steel is 10% or less as recited by claim 9 are not taught by prior art, such properties would be expected since prior art alloys meet the claimed compositional limitation and are produced with heating and rapid cooling to produce a solid solution homogenous matrix, and also in absence of proof to the contrary.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 6, 19, 20, 23 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,993,570 (Gray), Japanese patent 10017929 (hereinafter

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JP'929), Japanese patent 58-107476 (hereinafter JP'476) or Japanese patent 2001-288512 (hereinafter JP'512) in view of US Patent 6,162,389 (hereinafter Hase).

12. Primary prior art steels meet the claimed composition for the reasons stated above but do not contain small amounts of Sb, Sn, Pb As or Bi as recite claims 6, 19, 20, 23 and 26. It is, however, well known in the art as taught by Hase on lines 45 to 67 that it is conventional practice in the metallurgical art to add these elements to analogous low-alloy steels to further improve machinability. Since machinability would be a property desired and sought by primary prior art to produce finished products, then it would be an obvious modification well within the skill of the artisan to incorporate small amounts of Sb, Sn, Pb As or Bi to their steel to produce no more than the known and expected effect from such an addition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Deborah Yee
Primary Examiner
Art Unit 1742

DY